

## ABSTRACT OF THE DISCLOSURE

In a fuel cell system, a reformer supplies reformat to a fuel cell stack. A portion  
5 of the reformat flow is diverted for analysis by a hydrocarbon analysis system.  
Residual hydrocarbons in the reformat may damage the anodes of the fuel cell stack.  
Although incompletely-reformed reformat may include a variety of hydrocarbon  
compounds, the invention simply measures methane as an indicator of the overall  
performance level of the reformer. A currently preferred embodiment includes a  
10 catalytic combustion methane sensor. Combustion air and reformat are delivered in a  
fixed ratio to the sensor via positive displacement pumps. The system can provide  
alarm means or optionally a shut-off means to protect a fuel cell stack from elevated  
levels of hydrocarbons in the reformat stream.